



**UNDP/GEF PROJECT ENTITLED “REDUCING ENVIRONMENTAL STRESS IN THE
YELLOW SEA LARGE MARINE ECOSYSTEM”**

UNDP/GEF YELLOW SEA LME PROJECT

**LIST OF SUBJECT AREAS AND ASSOCIATED ENVIRONMENTAL PROBLEMS
RELEVANT TO THE TRANSBOUNDARY DIAGNOSTIC ANALYSIS**

Introduction

There is a need to identify both subject areas and specific environmental problems that will be considered in the Transboundary Diagnostic Analysis (TDA) for the Yellow Sea LME. The purpose of this document is to list the subject areas relevant to the UNDP/GEF Yellow Sea LME Project and to identify the Regional Working Group responsible for each subject area. It also has the purpose of preparing subordinate list of environmental problems that have already been identified in project documentation and to assign these to specific subject areas and, thereby, to the responsible RWG. The designated RWG has the responsibility of providing material for the preparation of the TDA including the characterization of problems and the completion of the causal chain analyses for environmental problems in their designated subject area.

Subject Areas

Table 1 shows a list of subject areas that are relevant to the YSLME Project. The table identifies the relevance of each of the subject areas to the four project Regional Working Groups and identifies the Regional Working Group responsible for the completion of TDA preparative work on problems within that topic.

Table 1: Regional Working Group Responsibilities for Subject Areas

Subject Area*	Regional Working Group			
	Biodiversity	Ecosystem	Fisheries	Pollution
Decline in commercially important fishery species	x	x	X	
Mariculture	x	x	X	
Environmentally destructive fishing practices	x	x	X	
Introduced species incl. mariculture and ballast water	X	x	x	
Species loss	X	x	x	
Changes in biodiversity	X	x	x	
Benthic habitat modification incl. beach erosion	X	x	x	x
Coastal habitat change and destruction	x	X	x	
Ecosystem structure & productivity	x	X	x	
Water quality (rivers, lakes and sea)	x	x	x	X
Eutrophication	x	x	x	X
Risks to human health				X

Key to Table:

- * The topic of biological carrying capacity of the Yellow Sea has been omitted from the list
- x indicates that the RWG has an interest in the subject area.
- X** indicates that the designated RWG has primary or lead responsibility for the subject area

A range of environmental problems have been identified in YSLME Project documentation such as Regional Working Group Reports and Component Synthesis Reports. These have been listed and assigned to specific subject areas in the following tables. The purpose of these tables is to ensure that an up-to-date and comprehensive list of problems are addressed in the TDA and that each problem is assigned to specific Regional Working Groups for the completion of problem characterization, the conduct of a casual chain analysis and the identification of options for intervention.

In some cases, it is not clear from the project documentation to which group specific environmental problems have been assigned. This is particularly true in relation to habitat issues. In some cases, entries in the following tables have been highlighted in yellow for subsequent discussion and decision as to their assignment. In any event, the following tables that designate specific environmental problems to the RWGs need to be discussed, amended as appropriate and adopted to enable further work on the TDA to be carried out.

Responsibilities of the Regional Working Group on Fisheries

Table 2 lists environmental problems in the subject areas of commercially important fishery species, mariculture and environmentally destructive fishing practices for which primary responsibility has been assigned to the Regional Working Group on Fisheries (RWG-F).

Table 2: Problems Relating to Fisheries (RWG-F)

Subject Areas: Commercially Important Species; Mariculture; Environmentally Destructive Fishing Practices	Regional Working Group			
	Biodiversity	Ecosystem	Fisheries	Pollution
Over-exploitation of target wildfish species			X	
Unsustainable mariculture			X	
Environmental contamination from mariculture			X	
Acidification of marine sediments			X	
Nutrient releases			X	
Pharmaceutical residue releases			X	
Bacteriological contamination of marine sediments			X	
Risks to human health through consumption of mariculture and aquaculture products			X	

Responsibilities of the Regional Working Group on Biodiversity

Table 3 lists environmental problems in the subject areas of introduced species, species loss, biodiversity and benthic habitat modification for which primary responsibility has been assigned to the Regional Working Group on Biodiversity (RWG-B).

Table 3: Problems Relating to Biodiversity (RWG-B)

Subject Areas: Introduced Species; Biodiversity and Habitat Modification	Regional Working Group			
	Biodiversity	Ecosystem	Fisheries	Pollution
Reductions in benthic habitat in terms of area, quality and/or structure (other than by inappropriate fishing practices)	X			
Changes in benthic habitat structure	X			
Coverage of protected areas in the land coastal zone	X			
Coverage of protected marine areas	X			
Loss of biodiversity	X			
Effects on biodiversity caused by the introduction of xenobiotic species	X			

Table 4 lists environmental problems in the subject areas of coastal habitat change and ecosystem structure and productivity for which primary responsibility has been assigned to the Regional Working Group on Ecosystems (RWG-E).

Responsibilities of the Regional Working Group on Ecosystems

Table 4: Problems Relating to Ecosystem (RWG-E)

Subject Areas: Coastal Habitat Change; Ecosystem Structure and Productivity	Regional Working Group			
	Biodiversity	Ecosystem	Fisheries	Pollution
Benthic habitat destruction caused by inappropriate fishing practices		X		
Coastal habitat change and destruction		X		
Loss of aesthetic and recreational areas		X		
Loss of cultural and scenic areas		X		
Loss of coastal wetlands and bird habitat		X		
Increased vulnerability to natural extreme phenomena		X		
Changes in biodiversity and ecosystem productivity		X		
Preservation of cold water habitat in central YS		X		

Responsibilities of the Regional Working Group on Pollution

Finally, Table 5 lists environmental problems in the subject areas of water quality, eutrophication and risks to human health for which primary responsibility has been assigned to the Regional Working Group on Pollution (RWG-P).

Table 5: Problems Relating to Pollution (RWG-P)

Topics: Water Quality, Eutrophication and Risks to Human Health	Regional Working Group			
	Biodiversity	Ecosystem	Fisheries	Pollution
Eutrophication				X
Nitrogen enrichment				X
Phosphorus enrichment				X
Silicate depletion				X
Changed Si:N:P ratios				X
Oxygen depletion				X
Phytoplankton blooms including red tides				X
Contamination and Effects (Pollution)				X
Faecal contamination				X
Heavy metal contamination				X
Changes in sediment fluxes and mobilization				X
POPs contamination				X
PAH contamination				X
Marine litter				X
Increased risks to human health				X
- through seafood contamination				X
- through exposures to contaminated water				X

Contributions of the RWGs

Each RWG needs to consider the environmental problems in the subject areas for which it has primary responsibility, as listed in Tables 2-4, and undertake the following:

- a) Describe each environmental problem;
- b) Characterize the nature and severity of each problem;

- c) Conduct a Causal Chain Analysis for each problem;
- d) If possible, assign rankings among the causes at each level in the causal chain analysis;
- e) Specify, based on the causal chain analysis, whether each problem is domestic or transboundary; and
- f) Undertake an analysis of options for intervention for all levels in the causal chain analysis.

A document has been prepared and made available to all RWGs entitled “*Transboundary Diagnostic Analysis (TDA) for the UNEP/GEF Yellow Sea LME Project*” (YSLME PMO, 2006). This document provides more detail concerning the tasks (a) to (f) above.

The following steps should be taken by each RWG:

1. Consider the list of environmental problems in the appropriate table and add, subtract and/or revise the list of environmental problems as the WG deems appropriate;
2. Summarize the nature of the problem, where it occurs and its severity;
3. Conduct a causal chain analysis for each problem;
4. Consider the options for intervention relevant to each cause in the causal chain and summarize any disadvantages and advantages of such intervention.

Reference

YSLME PMO, 2006. “*Transboundary Diagnostic Analysis (TDA) for the UNEP/GEF Yellow Sea LME Project*”. 5 pp.